Environmental Management
Semi-Annual Public Update Meeting
Portsmouth Gaseous Diffusion Plant

June 28, 2001

OSU Research Center, Piketon, Ohio

Topics for Tonight's Meeting

- Environmental Cleanup Progress
  - X-701A Lime House Demolition
  - Removal of X-701C Neutralization Pit
  - Upgrading of current groundwater pump and treatment facilities
  - Extension of barrier wall around X-749 Landfill
  - Pilot-scale deployment of phyto/bioremediation treatment in X-749/120 groundwater plume

Topics for Tonight's Meeting

- Waste Management Shipments (3.7 M lbs.)
  - 1.8 M lbs. waste shipped off-site this fiscal year
  - 1.97 M lbs. scrap metal dispositioned to date

Topics for Tonight's Meeting

- Upcoming Environmental Cleanup Activities
  - Portsmouth awarded 2 of only 5 nationwide technology "Quick Win Deployment" proposals funded this fiscal year

Topics for Tonight's Meeting

- Other DOE Activities
  - EA for Reindustrialization-Schedule
  - Lithium Warehouses Emptied
  - Uranium Management Center
  - Winterization activities
  - DUF_6 conversion project
- Budget for FY 2002

Environmental Cleanup Progress

X-701A Lime House and X-701C Neutralization Pit Removal Action

X-701A Lime House and adjacent X-701C Neutralization Pit before remediation

Asbestos removal from roof of X-701A Lime House

The X-701C Neutralization Pit, the X-701A Lime House, and associated pipelines and utilities are being demolished as part of this removal action. The pit was used to neutralize acidic wastes generated from the Chemical Cleaning Facility. The X-701C Neutralization Pit is a RCRA tank unit that will be closed in accordance with Ohio EPA requirements. Demolition and site restoration activities will be completed by end of FY 2001.

Tear down of X-701A Lime House

Cleanup of final debris from X-701A Lime House

X-701A Lime House Removal Project

- $1.2M contract awarded March 2001 to remove X-701A Lime House and X-701C Neutralization Pit
- Lime was mixed with water and added to effluents from the plant's chemical cleaning facility to neutralize spent acids
- Field work began April 19, 2001; X-701A Lime House demolished in May
- Project completion scheduled July 2001

X-701C Neutralization Pit Removal/Treatment

- X-701C Neutralization Pit received effluent from X-700 Chemical Cleaning Facility until 1988
- Field work began May 22, 2001 to remove pit
- Removed pit and one foot of soil beneath
- 10,000 gallons of 5 percent hydrogen peroxide applied to excavated area to reduce organic contaminants
- Area is being backfilled, geomembrane and topsoil will be added to complete cleanup

Application of Hydrogen Peroxide Oxidant

X-622T, X-622 & X-624 Groundwater Treatment Facility Upgrades

Design work is scheduled to begin during FY 2001 on process modifications for the X-622T, X-622 and X-624 groundwater treatment facilities. X-622 modifications include additional equipment to increase capacity. X-622T modifications include replacement of liquid-phase carbon with an air stripping unit and vapor-phase carbon, while X-624 modifications involve replacement of liquid-phase carbon with a biologically-based treatment process. Process modifications will provide a significant cost savings over the operational life of each facility through elimination of off-site treatment and disposal of carbon.

X-622 Groundwater Treatment Facility

X-624 liquid-phase carbon column

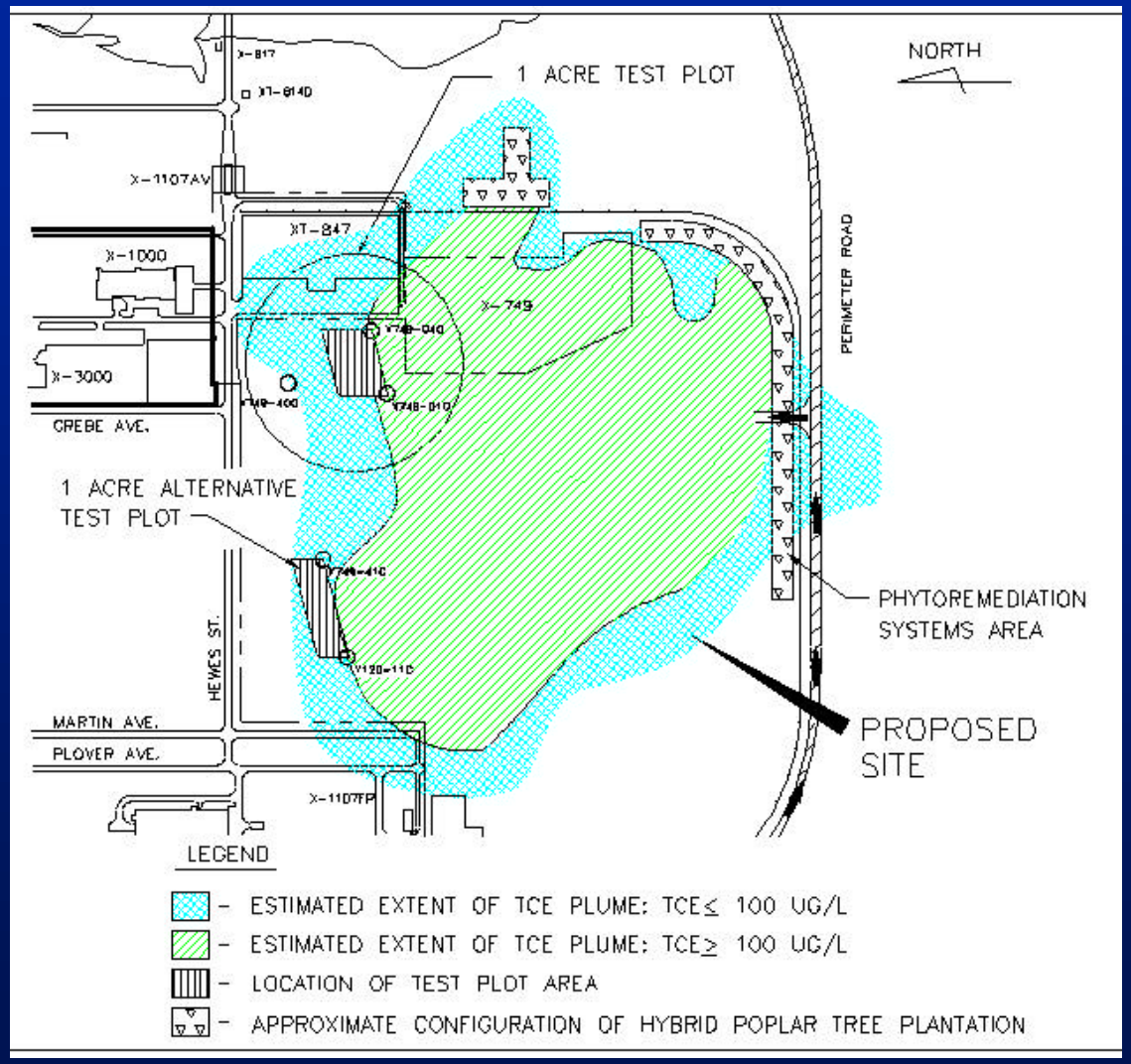
Extension of Barrier Wall Around X-749 Landfill

- Extending existing barrier wall around east and southern portion of the X-749 low-level waste landfill
- Impermeable barrier wall will consist of bentonite slurry into bedrock (30 ft. depth)

- Construction to begin mid-July 2001
- Work to be completed by end of August 2001

X-749/X-120 Groundwater Plume Treatment

- DOE supporting pilot-scale deployment expected to begin July 27, 2001.



Upcoming Environmental Cleanup Activities

- Portsmouth awarded 2 of only 5 nationwide technology proposals funded this fiscal year
  - Well injection depth extraction (wide) soil flushing enhanced with biological amendments - to be used at X-701B TCE contaminated groundwater plume
  - In situ anaerobic reactive zone treatment - to be used at X-749/120 TCE contaminated groundwater plume

Waste Management Shipments

Waste Management

In FY 2001, 3,703 drum equivalents of MLLW, 8,108 drum equivalents of TSCA-LLW, and 10,946 drum equivalents of LLW will be shipped off-site for treatment and disposal.
Benefit: Two major waste storage areas will be emptied.

Scrap Metal Disposition Progress

Aerial view of scrap metal yard

Cutting scrap metal with torch

To mitigate impacts from United States Enrichment Corp. layoffs, Bechtel Jacobs Company accelerated schedule and hired 50 displaced workers to size reduce, package, and dispose of 5,200 tons of contaminated scrap metal stored in the seven acre X-747H scrapyard. Shipment of the scrap metal to the Envirocare Disposal Facility in Utah began on February 27, 2001. Have shipped 57 of the 75 truck shipments required to meet the current goal of cutting and sending 1,300 tons off-site by the end of FY 2001.

Contaminated scrap for disposal

First load of scrap metal ready for shipment

Other DOE Activities

Environmental Assessment (EA) for Reindustrialization

- Prepared to consider potential impact associated with use of excess or underutilized land and facilities at plant
- Draft document issued for 30-Day public comment May 9, 2001
- June 11, 2001-Comment period closed; three comments received
- August 15, 2001-Planned date for issuance of final EA and decision document

Lithium Warehouses Emptied

- Last of seven warehouses used to store drums of lithium hydroxide emptied May 30, 2001
- Over past 5 years, nearly 190,000 drums shipped to buyers
- Eliminates storage and maintenance costs for the material ($15K / mo)
- Potential future reuse of these facilities

Lithium Warehouses

Last warehouses emptied May 2001

Depleted Uranium Hexafluoride (DUF_6) Conversion

- Two conversion facilities to be built (Public Law 105-204)
  - Portsmouth Site
  - Paducah Site
- Proposals received in March 2001 from five teams

Depleted uranium cylinder storage yard

- Contract expected to be awarded October 2001
- Web address for more information: http://www.oakridge.doe.gov/duf6disposition

Portsmouth Winterization Project

X-326 Process Building

UF_6 cylinder loading area

In June 2000, USEC announced plans to shutdown enrichment operations in June 2001. Since many of the Portsmouth facilities are heated with surplus heat from the enrichment process, the three major process buildings - X-326, X-330 and X-333, and approximately 30 other buildings will require freeze protection by the end of FY 2001. Winterization activities currently on-going and planned for FY 2001 include design and installation of replacement heating systems, conversion of fire-protection systems from wet to dry systems, and draining of process systems and utilities.

Portsmouth Winterization Project

- Actions required to conduct winterization / heating activities in preparation for Cold Standby operations
- Keeps plant in a restartable condition after enrichment operations shutdown (May 11, 2001)
- Install hot water boilers to provide heat for buildings that support EM mission
- Install series of 480-volt electric heaters in 3 main process buildings
- Protect facilities / systems from freezing
- Target startup November 2001

Uranium Management Center

- Portsmouth serving as interim storage facility for surplus DOE uranium material
- Shipments received:
  - 900 of 900 metric tons from Hanford
  - 13 of 20 metric tons from universities
  - 3,300 of 3,800 metric tons from Fernald
- Hanford shipments completed in May 2001 on schedule; Fernald shipments will conclude in Spring 2002.

Surplus uranium material unloaded at X-744G Facility

FY 2002 Budget

FY 2002 Budget - Portsmouth

- DOE Portsmouth on track for:
  - Environmental Restoration at $37.3 million
  - Waste Management Activities at $38.3 million
  - Uranium Programs at $15.7 million

Uranium Material Program Update

- First shipment of uranium material from Fernald arrived at Portsmouth June 1999.
- Material stored in and around the X-744G facility.
- Portsmouth has received 3,300 of the 3,800 metric tons of surplus uranium (87%) from Fernald. Total of 493 of planned 569 shipments completed.
- Portsmouth has received 900 of the 900 metric tons of surplus uranium (100%) from Hanford. Total of 92 shipments completed.
- Portsmouth has received 5 of planned 13 shipments (38%) of uranium material loaned to universities, totaling about 13 metric tons.
- Potential commercial uses for material are radiation shielding and special alloy metal applications.
- Material is stored at Portsmouth for future use or sale by DOE or until final disposition is determined.